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Beyond Sales Training: Designing a Learning Organization

RESPIRONICS, Inc.

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A successful medical equipment manufacturer found its sales training curriculum was growing at a time when the sales force had less time to attend classes. Rather than simply try to squeeze more training in less time, the training/medical education group decided to start from scratch, and redesign sales training jobs from the ground up. This performance-based approach led to breakthroughs in job design, career development, training, and a whole new way of implementing a learning organization.

Background

RESPIRONICS, Inc., designs, manufactures, and markets patient ventilation medical products used primarily in home-care and hospital situations. The company's manufacturing operations are located in the United States, Hong Kong, and China. Its products are sold worldwide through a network of independent manufacturer's representatives, direct-sales representatives, and health-care product distributors. Its products include state-of-the-art, computer-controlled, respiratory support devices that perform complex, life-supporting functions.

Having invented products that have since been imitated by its competitors worldwide, RESPIRONICS, Inc., remains the leader in a field that it, in effect, defined. Most of the people who sell the equipment have medical backgrounds. The extraordinarily complicated sales process requires that approval to purchase be obtained from physicians, hospital buying committees, nursing administrators, therapists,

This case was prepared to serve as a basis for discussion rather than to illustrate either effective or ineffective administrative and management practices.

and many other individuals and institutions throughout the continuum of patient care.

So Much Training, So Little Time

The training/medical education function (T/ME) is charged with providing basic training of new-hire salespeople, as well as new product updates. These new products and product enhancements are continually being developed and released by the company's four strategic business units (SBUs). These SBUs are often involved in friendly competition for various corporate resources, including sales-training support. Thus each SBU lobbies to ensure that its particular products are well represented in the sales training. At the same time, home-office sales and marketing managers want the training to provide fundamental sales and account management skills, orientation to corporate values, proper use of support personnel, appropriate administrative practices, and so on. As might be expected, regional field managers prefer that their people spend more time making sales calls and less time in formal training. Thus there is a continual struggle among these constituencies over how the precious few days of formal training will be allocated.

In the midst of this, T/ME's people find themselves in the difficult position of refereeing disputes among these constituencies over which topics should receive more emphasis. What's more, T/ME has sought to move sales training and support beyond a focus on content dissemination to a performance-based orientation. Such an orientation, as any trainer knows, requires that increasing amounts of training time be provided for practice and feedback. The bottom line: Sales, marketing, and SBU managers have increasingly longer lists of content to be presented in the limited time available; field managers want trainees to spend less time out of the field; and T/ME people want to make more practice time available to build skills.

Time to "Think Outside the Box"

Fortunately, the difficulties faced by T/ME are largely invisible to those outside the company. RESPIRONICS continues to expand its product line, its sales force, and the boundaries of its market, which is now served by field offices around the world. Driven by this rapid growth and a need to ensure that the "best practices" of its successful sales veterans are captured and disseminated to new hires, T/ME resolved that it could not continue business as usual. It could not persist in designing and institutionalizing a sales-training program that was, in effect, serving as the neck of the funnel in which new content, new skills, and new-hire salespeople become stuck until course developers can complete their latest revisions. So T/ME decided that it was time for a fundamental overhaul in its approach to training and training development. It determined that three important goals of this overhaul would be a more change-resistant curriculum, the ability to deliver just-in-time training, and an emphasis on performance enhancement instead of merely providing training. A fourth goal, and one that ultimately took T/ME into uncharted waters, was for all members of the sales organization to take responsibility for their own ongoing learning. It followed from this fourth goal that every one of the stakeholders in the sales process should participate in creating a program that would transform them all into a learning organization. Having no experience with executing such a transformation, T/ME decided to focus on the creation of several outputs that seemed to be essential underpinnings. These included the following:

- high-resolution definition of the sales job (that is, a comprehensive and detailed sales job model to serve as a framework for organization-wide learning and curriculum renewal)
- a detailed sales career path to help guide individual development of salespeople
- a broad, performance-based curriculum architecture, emphasizing field-driven training and including home study, mentoring, and the extensive use of performance aids and enhanced support systems to supplant training
- a set of standards for instructional designers who would be creating the learning-support materials (to help ensure quality and consistency)
- detailed descriptions of specific courseware, job aids, field support practices, and management support requirements to guide designers and developers
- a prioritized list of the many instructional development projects that the program would initiate.

The Initiative

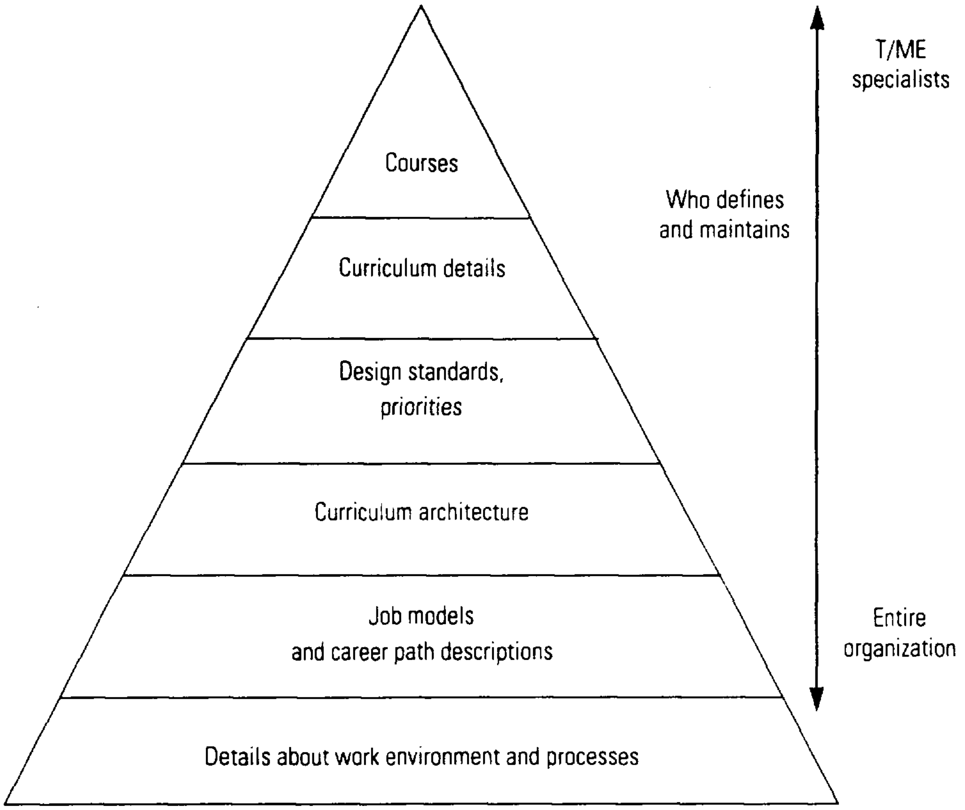
From the onset, the T/ME team faced a paradox: To support the learning organization, the teaching-learning process as well as its core vision and values had to be decentralized throughout the entire organization. That which made up the content of the learning ("best practices," essential skills, company policy, new product information, and the like), however, would have to be centrally acquired, structured, and maintained. The dilemma was clear: Given the need for a centralized coordination, how could T/ME ensure real, meaningful participation by all the far-flung members of the sales and marketing organization?

What was needed was a new training development paradigm. It became clear that it would not be enough for a mere handful of home-office-appointed subject matter experts (SMEs) to speak on behalf of a particular constituency. If responsibility for learning was to be ubiquitous, then input on the underlying structures, premises, and content of the learning would need to be nearly universal. For this reason, everyone in the sales and marketing organization was invited to analyze the sales work process, identify essential skills that would make up the job model, and define the essential teaching-learning structures that would need to be in place. T/ME's role was to facilitate and coordinate inputs, synthesize results, circulate results for review, collect feedback, revise, and recirculate for final approval. Because the salespeople are primarily responsible for selling products instead of creating training, however, T/ME was careful to reduce the intensity of sales force participation over time. In this way, the T/ME team ensured that the underlying structures and assumptions were synchronized with the prevailing values of the sales force, and, at the same time, saved the sales force from the chores of developing training and performance support tools.

Figure 1 illustrates how the responsibility for defining and maintaining the various outputs was apportioned. Note that the entire organization (not merely a handful of SMEs) was largelv responsible for the description of the sales work environment and processes, the job model, and the career paths. This broad effort helped to ensure that the perspectives of all regions in the field, all market environments (e.g., hospital, home care), and all levels of the RESPIRONICS salesperson were represented in the definitions. At the same time, it allowed vital team building and a broad "group consciousness" to evolve as the sales force essentially defined itself and its values. Because these are foundations for all other learning-support mechanisms, they are depicted as the base of the pyramid.

At the other end of the scale, the creation of curriculum details and courses became the responsibility of the training specialists. As the pyramid shape implies, the training specialist's role was more narrowly defined as determining tactics (i.e., specifying curriculum details and courses) and executing the strategy dictated by the broader organization's definition of work processes, job model, and so on.

Figure 1. Responsibility for learning support mechanisms.

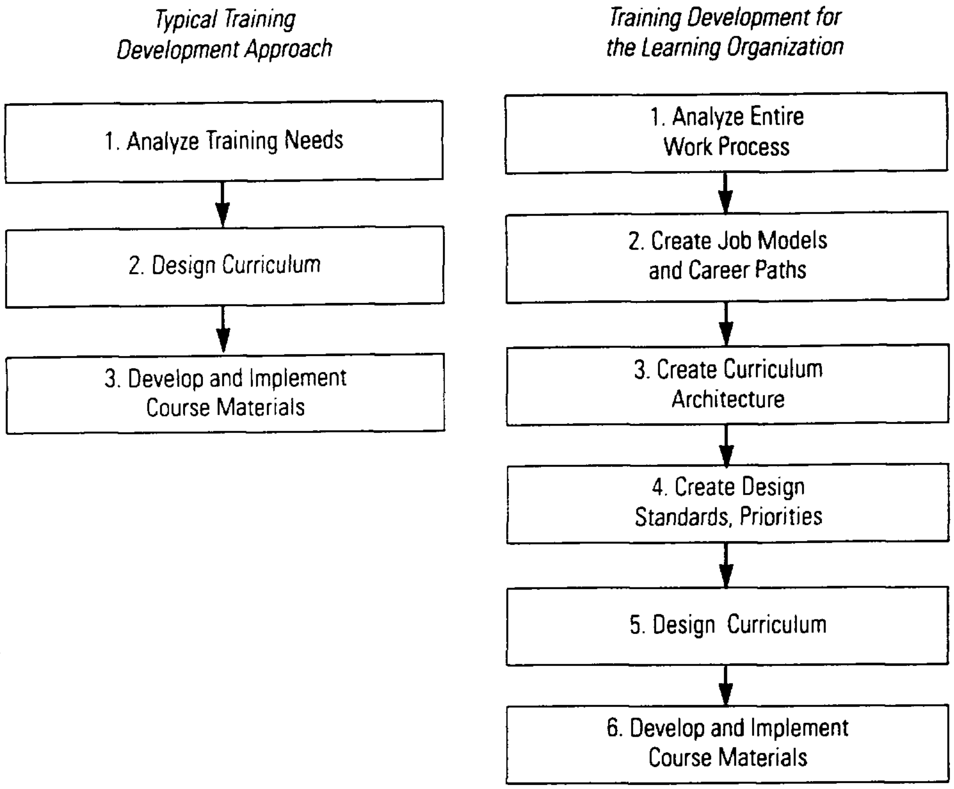

Courses
Curriculum details
Design standards, priorities
Curriculum architecture
Job models and career path descriptions
Details about work environment and processes
Who defines and maintains
T/ME specialists
Entire organization

A New Approach to Training Development

It was clear to T/ME that the learning-support mechanisms identified in Figure 1 could not be created using typical training development methods. A new approach was needed. Figure 2 illustrates the differences between the typical approach to training development and the training development process that T/ME used to facilitate the learning organization.

Note that the first step in the typical approach is to analyze training needs. The result of this analysis is usually a list of performance requirements, training objectives, recommended courses, and so on. Based on the results of the analysis, curriculum is designed, which includes creating new course descriptions, enhancing existing course descriptions, and describing how individual courses interrelate as a cohe-

Figure 2. Approaches to training development compared.


Typical Training Development Approach
1. Analyze Training Needs
2. Design Curriculum
3. Develop and Implement Course Materials
Training Development for the Learning Organization
1. Analyze Entire Work Process
2. Create Job Models and Career Paths
3. Create Curriculum Architecture
4. Create Design Standards, Priorities
5. Design Curriculum
6. Develop and Implement Course Materials

sive curriculum. Subsequently, the new courses are developed and implemented. This entire process is repeated frequently as new products are introduced and new programs are instituted because both of these innovations typically require some training support.

By comparison, it is clear that although training development for the learning organization achieves the same results (i.e., curriculum design and implemented courses), it is focused on achieving broad structures that support decentralized, learner-driven training. Additionally, the structures created by this approach (work process definitions, job model, career paths, curriculum architecture, and training design standards) are purposely designed to be generic in nature. For example, a properly crafted generic job model will be as useful in developing training in support of Product A as it is in developing training in support of Product B.

This generic focus achieves several important benefits. First, the structures will endure over time; thus the work involved in creating them will not need to be repeated frequently. Second, the structures may serve as yardsticks against which to measure the value of new training requests. Third, because the structures were invented and processed by most of those in the organization, they are more likely to withstand the assault of one or two individuals who are working their own agendas. So, for example, a manager who feels that an inordinate amount of the available training time should be devoted to his or her new product could quickly be reminded that there is a larger, organizationally supported context into which new training must fit. Fourth, because these structures answer many of the questions asked routinely by instructional designers (e.g., What are the required skills? What is the work environment?), they can be drawn upon to inform individual course development activities. This reduces the time needed to perform front-end analysis, which in turn supports just-in-time training development.

Finally, and most important, these generic structures are likely to retain their relevancy when used in unanticipated ways by individuals in the organization who are taking charge of their own learning. For example, a regional manager who wishes to design and create unique training to meet a local need will be able to do so within the context of the larger curriculum architecture, drawing on existing training materials and combining them in unique ways. Or a manager involved in hiring and training new salespeople would be able to use a detailed checklist of skills derived from the job model as a basis for negotiating job-entry level, structuring performance appraisals, and suggesting required training. Conversely, an individual salesperson could examine the job model and career path descriptions, then design a unique learning sequence to help meet individual development goals.

A Closer Look

This section will examine each of the steps by RESPIRONICS's T/ME to create the essential learning-support mechanisms identified earlier. In particular, we will describe the substeps used to accomplish each step, the outputs created by those substeps, the challenges encountered, and the keys to successful completion.

STEP 1: ANALYZE ENTIRE WORK PROCESS. This step was accomplished using several traditional front-end analysis techniques. Unlike traditional front-end analysis in which a handful of SMEs and sample members of the target audience represent their constituencies, our analysis invited everyone in the sales and marketing organization to participate. A summary is shown in Table 1.

As shown in the table, the overall output of this step was a comprehensive report with essentially two emphases: a description of existing practices (i.e., current marketing strategy, account management strategies as practiced by salespeople, and current sales call practices) and recommendations for improvement in company policies and procedures that support salespeople's work (i.e., sales, marketing, and administrative policies; customer support and sales support available from home office; enhancement of support tools such as job aids, computer software, reference materials; and sales training). These two emphases allowed the report to do double duty. It could be used by performance analysts designing training and support systems and, at the same time, could be used by corporate leaders in guiding improvements in policies and procedures.

The core project team for this and subsequent steps included the T/ME manager and an external consultant. The project sponsors included the heads of both marketing and sales. The sponsors were highly motivated to find out everything they could to improve their sales organization. To maintain this motivation, the core project team involved them in the project at a fairly detailed level. Specifically, the sponsors

- reviewed and shaped the overall definition of the analysis
- reviewed and shaped analysis tools, suggesting additional analysis questions and revisions
- provided personal voice-mail invitations to the entire sales force
- helped the core project team find patterns in the data at the yellow pad sessions.

In addition, the field salespeople were highly motivated and eager to participate. To maintain their motivation, the core project team

- continually reminded them about how critical their participation was to the future of RESPIRONICS
- avoided group meetings and the corresponding scheduling difficulties and travel time; instead, the core team scheduled one-on-one telephone interviews entirely at the convenience of the salesperson. (This often meant late-night or early-morning phone calls for the interviewer as connections were made across several time zones.)
- guaranteed interviewees complete anonymity and freedom to complain by having the outside consultant conduct all interviews and report results by job category only; no names were reported to management.

Table 1. Step 1: Analyze entire work process.

Output: Report describing overall marketing strategy, account management strategies, and sales call practices; recommendations for improvements in company policies, procedures, support tools, and training.

Substep	**Description**	**Outputs**	**Challenges**	**Keys to success**
A. Identify variables.	Review documentation and meet with internal sponsors.	Definition of the breadth and depth of the analysis.	Align expectations of analysis team and sponsors.	Obtain support and perspectives from highest possible management level.
B. Develop tools and strategies.	Create the tools and approach to be used to conduct the analysis.	Description of analysis strategy and drafts of interview guides, questionnaires, meeting agendas.	Devise an approach that is comprehensive yet cost-effective.	Consider all possible means of gathering information.
C. Confirm assumptions and approach.	Review analysis tools and strategy with sponsors.	Sponsor approval of strategy and sponsor commitment to help open doors for analysis team.	Make certain sponsors understand level of support required by them.	Carefully walk sponsors through tools and show how they'll be used; be prepared to ask for specific sponsor support in opening doors.
D. Conduct analysis.	Use tools as planned to gather data.	Mass of unrefined data about entire work process.	Ensure participation by busy sales professionals both inside and outside the company.	Avoid large group meetings; use voice mail to coordinate appointments; provide anonymity of responses; interviewer be flexible with schedule; top-management position project as high priority.
E. Synthesize and create "yellow pad" review notes.	Synthesize data, look for patterns, and create rough notes for sponsor/team debriefing.	Rough notes regarding analysis results and listing of potentially difficult issues.	Find patterns and derive meaning from masses of data.	Tools should be designed with this "data crunching" in mind; allow plenty of time for thoughtful analysis.
F. Review yellow pad with sponsor	Meet with sponsor and discuss preliminary findings and implications.	Discussion of key issues and sponsor help with interpreting findings.	Keep sponsor focused on intent of analysis; wrestle with implications.	Keep group focused on larger patterns and most controversial issues.
G. Develop and present final report.	Finalize report, then present and distribute.	Comprehensive description of work process and ways to improve.	Determine what information, in what form, to distribute to whom.	Report broad data summaries, trends in main body and management presentations; make detailed data available in appendixes.

Completing the analysis required several weeks of individual interviews of about one hour each. Both structured and open-ended responses were gathered. Questions were designed to elicit details about the way the salespeople actually sold RESPIRONICS products, including:

- actual work processes as opposed to mandated work processes, including their own personal, real-world models of the sales and account management cycles
- ways in which the home-office policies and procedures helped and hindered their success
- ways they would improve the training and support provided by both the home office and their field management
- what they needed to support their own individual development.

When the dust settled and the data were crunched, the core project team noted two results of this extensive research effort. The first result, as expected, was that they gathered an enormous amount of data that would prove invaluable in upgrading sales support and training. A second and possibly more powerful result was that the extensive one-on-one, self-analytical interviews had begun to reveal to many people in the organization ways in which they could all take greater responsibility for their own learning. There was talk of using mentors and of implementing field-based training. An awakening of sorts had begun. The seeds of the learning organization had somehow planted themselves.

STEP 2: CREATE JOB MODEL AND CAREER PATH. This step was designed to create a detailed, performance-based model of the RESPIRONICS sales professional and to prescribe the path to be taken as the salesperson evolves from new-hire to advanced salesperson. You will recall that in Step 1 we captured substantial details on the "what is" and "what should be" of the sales job. What's more, we were confident that these details represented the most accurate picture of the sales organization because it came from most of the stakeholders, instead of a handful of SMEs. In Step 2, the project team built upon these details to create a solid picture of the "ideal state." The substeps required to complete this step are shown in Table 2.

All field sales managers participated in this step. To manage their input, the core project team provided them with a list of hypothesized skills drawn from the analysis data gathered in Step 1. This hypothesized skills list, which included more than 220 skills believed to be essential to the job of RESPIRONICS sales professional, was organized as follows:

- There were 10 broad job functions (such as "complete sales calls" and "manage the account").

Table 2. Step 2: Create job model and career path.

Output: *Performance*-based model of the job of RESPIRONICS sales professional and description of required proficiencies as sales people advance in their careers.

Substep	Description	Outputs	Challenges	Keys to success
A. Conduct kickoff meeting.	Hold orientation meeting for sponsors and project team (T/ME, field sales managers).	Sponsor and project team know their roles and responsibilities.	Motivate as well as orient.	Show tie-in to larger mission; provide detailed project schedule; have top management "sell."
B. T/ME create list of hypothesized skills.	Draw on Step 1 report to "invent" potential list of critical sales skills.	List of hypothesized skills for review by field sales managers.	Create generic enduring skill statements at sufficient level of detail to stimulate thoughtful review.	Remain true to best practices as articulated in Step 1 reports and interviews.
C. Field sales managers review, provide feedback.	Field sales managers review skills list and provide feedback to T/ME team.	Thoughtful review and feedback by field sales managers.	Encourage managers to focus on job performance, not simply content.	Allow adequate time; guide reviewer analysis with clear instructions for review.
D. Synthesize feedback and create job model.	Compile reviewer feedback and sort it out; create first draft of job model.	First draft of job model.	Create generic, enduring job model at sufficient level of detail.	Create "high-level" version; supplement with more detailed version for reference.
E. Field sales managers review, provide feedback.	Field sales managers review job model and provide feedback to T/ME team.	Thoughtful review and feedback by field sales managers.	Encourage managers to focus on job performance, not simply content.	Allow adequate time; guide reviewer analysis with clear instructions for review.
F. Synthesize feedback and finalize job model.	Compile reviewer feedback and sort it out; create final job model.	Final version of job model, fully supported by field sales managers.	Get complete support by all field sales managers, despite differences of perspective.	Encourage top management intervention in resolving conflicting opinions.
G. Draft career path description	Create first drafts of career path description.	Description of job levels and required levels of proficiency.	Get top management input and agreement.	Provide managers with detailed recommendations to stimulate reaction; don't expect them to create career paths.
H. Field sales managers review, provide feedback.	Field sales managers review descriptions and provide feedback to T/ME team.	Thoughtful review and feedback by field sales managers.	Encourage managers to focus on job performance.	Allow adequate time; guide reviewers with clear instructions.
I. Synthesize feedback and finalize career paths.	Compile reviewer feedback and sort it out; create final career paths.	Final version of career paths, fully supported by field sales managers.	Get complete support by all field sales managers, despite differences of perspective.	Encourage top management intervention in resolving conflicting opinions.

- Job functions broke down into several job duties (for example, "complete sales calls" was subdivided by "maintain a list of leads," "prepare the sales call," and "execute the sales call").
- Each job duty was further broken into its constituent skills and subskills (for example, "prepare the sales call" included such skills as "set the call objective" and "plan an opening statement").

Each field sales manager and key home-office managers reviewed the hypothesized skill descriptions and added, deleted, revised, or otherwise annotated them. In addition, they were asked to indicate whether the skill was one which successful sales representatives performed often, whether it was absolutely essential to success, and whether it was a skill that required on-the-job feedback and coaching from a senior person to be developed fully by new hires. Managers then provided their feedback to the core project team in one-on-one interviews. Their feedback was synthesized and transformed into the first draft of the job model, then recirculated for another round of review. (This approach is similar to the Delphi technique; that is, it allowed all the different reviewers' initial perspectives to be presented independently, uninfluenced by group discussion, and then gave each reviewer the benefit of rethinking his or her position based on the synthesized models that incorporated the perspectives of the other reviewers.) In the final round, the job model was again examined and annotated by reviewers whose comments were once more synthesized and integrated to create the final job model.

After identifying the required skills in the job model, the project team was able to create a grid that showed levels of proficiency required for each of these skills, depending upon the sales rep's job level. New-hire (entry-level) reps were required to have the least proficiency with skills, and seasoned sales reps were expected to be fully proficient at most skills. Finally, the senior sales reps and clinical sales specialists were expected to be proficient at all skills and able to coach others in the performance of some skills. Thus career paths were identified showing how a rep might be expected to progress from entry level, through sales rep, to senior rep or clinical sales specialist. These career paths, like the skill lists and job model, were circulated, evaluated, discussed, and revised by the field managers. As might be expected, they generated heated discussion.

The biggest difficulty the core project team faced was melding the diverging perspectives of the reviewers. It took several iterations and occasional intervention by the sponsors to obtain a job model and career paths that everyone could support. The effort was worth it: What had been a relatively vague, one-page job description of the RESPIRONICS salesperson was now a multipage set of performance specifications. And what had been an idiosyncratic set of unarticulated assumptions about the detailed tasks to be performed by the salesperson had now crystallized into a high-resolution picture that all sales and marketing managers shared. From the T/ME point of view, this job model would prove of great value for designing training products. More important, by participating in the creation of this job model, managers became aware that the mass of skills needed to function as a successful sales rep could never be provided by a centralized training program alone. The teaching-learning process needed to include all sorts of field experiences for which managers and reps themselves would have to take responsibility. So once again, the completion of a project step had heightened awareness of the need for organization-wide learning.

STEP 3: CREATE CURRICULUM ARCHITECTURE. After the completion of the job model and career paths, T/ME was ready to erect a framework within which learning-support mechanisms (such as training modules, field coaching guidelines, and job aids) could be developed. This framework, or curriculum architecture, needed to be broad and generic enough to help developers create learning-support tools for a broad range of new products and programs, some of which could not be accurately predicted. In other words, the curriculum architecture had to guide instructional development without prescribing content in detail. At the same time, it needed to be specific enough to ensure that the specific set of more than 220 skills articulated in the job model were all accurately represented. Table 3 illustrates the substeps used to complete this curriculum architecture.

As noted earlier, during the creation of the job model, a dialogue with management had already begun regarding the need for coaching support to help sales reps achieve some of the required skills. The core T/ME project team realized that this and other field-based learning-support structures would be an essential part of the learning organization. So in completing this step, the core project team decided to contact the field manager-reviewers to "break it to them gently." That is, because of the management support needed, the team contacted the field manager-reviewers informally to discuss their ideas with them prior to sending out the curriculum for management review. During this time, a list of 10 curriculum goals was created, along with terminal performance objectives (TPOs) describing the "big picture" performance

Table 3. Step 3: Create curriculum architecture.

Output: Comprehensive strategy for sales training, including broad descriptions of all training materials, job aids, and processes needed to help sales people acquire essential career skills.

Substep	Description	Outputs	Challenges	Keys to success
A. Create goals and terminal performance objectives (TPOs).	Create descriptions of training goals and TPOs.	Statement of broad training goals and sequenced list of TPOs matched to career paths and job model.	Provide structure to move beyond centralized responsibility for training to field and individual responsibility; translate skills in job model directly into performance objectives.	Management dialogue to build support of field-based structures, such as mentoring and performance coaching; author experience in performance technology and training.
B. T/ME review and approve goals and TPOs.	Circulate goals and TPOs for internal T/ME review.	Approval of goals and TPOs by T/ME.	Referee T/ME opinions regarding strategy.	Stick to vision of decentralized future as context for review.
C. Draft enabling objectives (EOs) and supporting strategies.	Flesh out goals and TPOs by adding EOs and other descriptions of what is required to support teaching-learning of each.	First draft of curriculum document including EOs and descriptions of typical instructional strategies, job aids, and support materials for reach.	Present a level of detail that brings the curriculum vision to life, yet remains generic enough so developers have room for later interpretation.	Take care to appropriately design and sequence objectives; leave room for interpretation by developers; avoid references to time-dated products or processes.
D. T/ME review and approve enhancements.	Circulate full document for internal T/ME review.	Approval of full document by T/ME.	Referee opinions regarding interpretation of vision.	Stick to vision of decentralized future as context for review.
E. Circulate to managers and get feedback.	Circulate full document for review by home-office and field sales managers, then obtain their feedback.	Approved curriculum architecture.	Help managers look beyond content to see implications of strategy choices.	Allow adequate time; guide reviewers with clear instructions; highlight certain sections based on reviewer responsibility; make substantive changes in strategy as required.
F. Synthesize feedback and finalize document.	Compile reviewer feedback and sort it out; create final curriculum architecture.	Final version of curriculum architecture.	Obtain support from all managers.	Encourage lots of communication regarding disagreements and solicit top management intervention in resolving conflicts.

measures to be attained by the learners. The list of goals included such phrases as "minimize time spent away from the field" and "incorporate structured, field-based experiences that are coordinated by field managers." These measures would be a departure from business as usual, but because of their earlier participation in analyzing the skill requirements and creating the job model, field managers seemed to realize the necessity.

The output of substep A (the goals/TPOs document) articulated several field management requirements, including the need to select and assign a sales mentor to work with each new hire as he or she performs field-based assignments. In addition, this document called for a T/ME performance coach to be assigned to all new hires to help them with their individual training development needs and to evaluate competency through field testing opportunities. Finally, this document clearly described performance measures which, if performed successfully, could allow the new hires to "test out" or skip much of the training.

After internal T/ME review and approval of the goals and TPOs, the core project team began fleshing out the curriculum architecture, adding enabling objectives and corresponding descriptions of typical instructional strategies, job aids, and support materials. The curriculum architecture described three major ways in which learning support would be provided. First, there would be home-study packages that would take the form of self-contained sets of materials including print manuals with self-check quizzes, support media, and instructions for completing field activities. Second, there would be field activities, including sales-mentor observations, interviews, and performance measures, such as completing a successful sales call while being observed and evaluated. (Both sales mentors and T/ME performance coaches would provide support for these field activities.) Third, there would be group training activities (some at home office and some in regional locations) to allow salespeople to perform group problem solving, to practice simulated customer interactions or demos, and to provide a forum for dissemination of "just-in-time" content about new products or processes.

The key to this new curriculum vision is that learning is driven by individual development requirements. That is, new hires, working with their field managers and T/ME performance coaches, can evaluate themselves according to a rigorous, unambiguous set of skills outlined in the job model. They can then determine an appropriate entry point on the career path and decide which direction they want to go and how quickly. They can use the home-study packages and field activities to learn new skills and show proficiency (test out) of skills they already have. Finally, they can decide for themselves when they need to attend group training activities. The bottom line is that the responsibility for learning has shifted to the individual and his or her immediate supervisor. In short, the curriculum provides the mechanisms for supporting a learning organization.

STEP 4: CREATE DESIGN STANDARDS AND PRIORITIES. Up to this point T/ME had identified many of the boundaries within which the learning organization could be established. In particular, a reality-based job model, a corresponding set of career path descriptions, and a performance-based curriculum architecture had all been created. This would seem to be enough to allow instructional developers to proceed with the creation of new materials. However, T/ME realized that such a dramatic reorientation of the teaching-learning process meant an enormous amount of new instructional development as well as substantial revisions to existing materials. Although all this work would be a challenge, it was also an opportunity to develop new materials that were of higher quality and more consistent than previous courseware. Because instructional developers would need guidelines to achieve these improvements, T/ME decided to create and implement instructional design standards before starting any development or revision. In addition, because there were far more ID projects identified than there were staff members to complete them, a prioritized list of development projects was also needed. Table 4 illustrates the substeps involved in creating these design standards and priorities.

This step was completed almost entirely by the T/ME core team, with occasional reviews by sponsors and others in T/ME. The purpose of this step was to operationalize the values implicit in the job model and curriculum architecture by giving developers the tools to transform the curriculum vision into tangible learning-support materials. Specifically, broad guidelines and detailed checklists were created to help designers structure and write instructions for mentor and coach involvement, build field-based performance measures, set up job aids, design group training events, and the like. In addition, specific examples of page layout and boilerplate introductory materials were provided.

All of these reference tools were assembled in a three-ring binder with a divider tab for each of T/ME's instructional development project management phases. If designers needed help with sequencing objectives and designing a training blueprint, for example, they located the appropriate tools by looking behind the tab marked "Blueprint." Each

Table 4. Step 4: Create design standards and priorities

Output: A document showing physical formats, instructional design features, and other required components of RESPIRONICS's sales training/support materials; a list of instructional development priorities.

Substep	Description	Outputs	Challenges	Keys to success
A. Gather sample training and support materials.	Locate, examine, and discuss high-quality examples of training materials, job aids, and other learning-support materials.	Collection of good examples of different types of learning support materials	Obtain samples that most T/ME staff members agree are high-quality.	Obtain good examples from T/ME staff; make sure staff highlights best features/rationales for their selections.
B. Outline design standards.	Create outline of design standards document.	Outline of guidelines, tools, samples, and the like to be included in design standards document	Anticipate materials T/ME staff will be creating; incorporate guidelines into outline.	Author refer to both the curriculum architecture (shows future needs) and existing materials (shows current state).
C. T/ME manager review and approve.	T/ME manager review the outline, suggest revisions, and approve.	Approved outline of design guidelines	Make certain outline is comprehensive.	T/ME manager refer to both the curriculum architecture and existing materials to see that current and future types of support materials are represented.
D. Create design standards document.	Write design guidelines, including annotated samples of best practices and assemble these into a reference manual.	A design standards document, including reference tools for developers and samples of recommended learning support materials (layout, organization, etc.)	Organize document so it may be easily updated and needed information is easy to find.	Assemble materials in a large three-ring binder; organize contents according to stages of instructional development process; include tabs, section explanations, and table of contents.
E. Analyze existing training.	Locate and examine current materials; attend current training sessions; compare current to ideal.	Understanding of how existing materials compare to those called for in curriculum architecture	Locate and capture all training for review.	Attend live sessions to capture undocumented instructor enhancements.
F. Create discrepancy report.	Create report identifying gap between actual and desired training; review with T/ME manager.	Report identifying needed learning support materials (approved by T/ME manager)	Because of different structures, it's difficult to compare desired state with existing state.	Allow plenty of time for analyst to do thorough job.
G. Create and implement prioritization criteria.	Create criteria for evaluating each training need and apply criteria to needs listed.	Worksheet with numerically weighted prioritization criteria; prioritized list of development requirements	Make certain evaluation criteria reflect values of entire organization.	Before applying evaluation criteria, review with selected managers.

section also contains an introduction summarizing the purposes, results, and people responsible for completing that management phase, thus providing designers with key project management guidelines.

Another important output of this step was a prioritized list of instructional development requirements. The purpose of this list was to help figure out where to begin the revisions of existing materials and the creation of new materials. To complete this list, the T/ME core team first inventoried the existing training by attending training sessions and by assembling printed and audiovisual materials. Next, they reviewed the curriculum architecture and determined the gap between the existing materials and those needed to support the new learning organization. A list of needed revisions and enhancements was then created. Finally, they created evaluation criteria and applied them to the list to identify the priority ranking of each potential revision or enhancement. Three criteria were used:

- Is it an urgent business need?
- Is it an important prerequisite from a medical perspective?
- Will a minimum amount of development effort yield a maximum amount of results?

Then they tallied the scores on each of these criteria for each potential revision or enhancement to determine development priority.

In sum, by the completion of step 3, T/ME had effectively involved the entire sales organization in defining its ongoing learning requirements, in endorsing a performance-based model of the sales job, and in erecting a curriculum architecture. Step 4 operationalized these elements by providing instructional designers with the necessary tools and priorities to start creating the learning-support mechanisms needed in the learning organization.

STEP 5: DESIGN CURRICULUM; AND STEP 6: DEVELOP AND IMPLEMENT COURSE MATERIALS. It is appropriate at this point to distinguish between the results of Step 3, create curriculum architecture, and Step 5, design curriculum. RESPIRONICS's curriculum architecture is a broad framework identifying performance targets and describing generic ways to achieve those targets. It is designed to stand the test of time. The detailed curriculum descriptions that result from completion of Step 5, however, are specific implementations of this curriculum architecture. That is, Step 5 results in a document whose structure reflects the curriculum architecture but whose detailed contents reflect new RESPIRONICS products, product enhancements, updates in administrative and support procedures, and so on.

Figure 3 illustrates and distinguishes the outputs of these steps. First, the curriculum architecture is created, defining the broad, structural components of the curriculum. The values implicit in this architecture are then captured in our design standards for later reference by course writers. Next, the detailed descriptions of the curriculum components are created, listing high-level objectives, training strategies, and other instructional specifications. In this way, the ID team may zoom in for a look at the details or look at the entire curriculum document for a view of the big picture. Finally, the course materials are created and implemented: Home-study packages are built, including self-study texts, job aids, and quizzes; field activities, including coaching guidelines and student assignments are created; and group training activities (facilitator notes, exercises, and the like) are created.

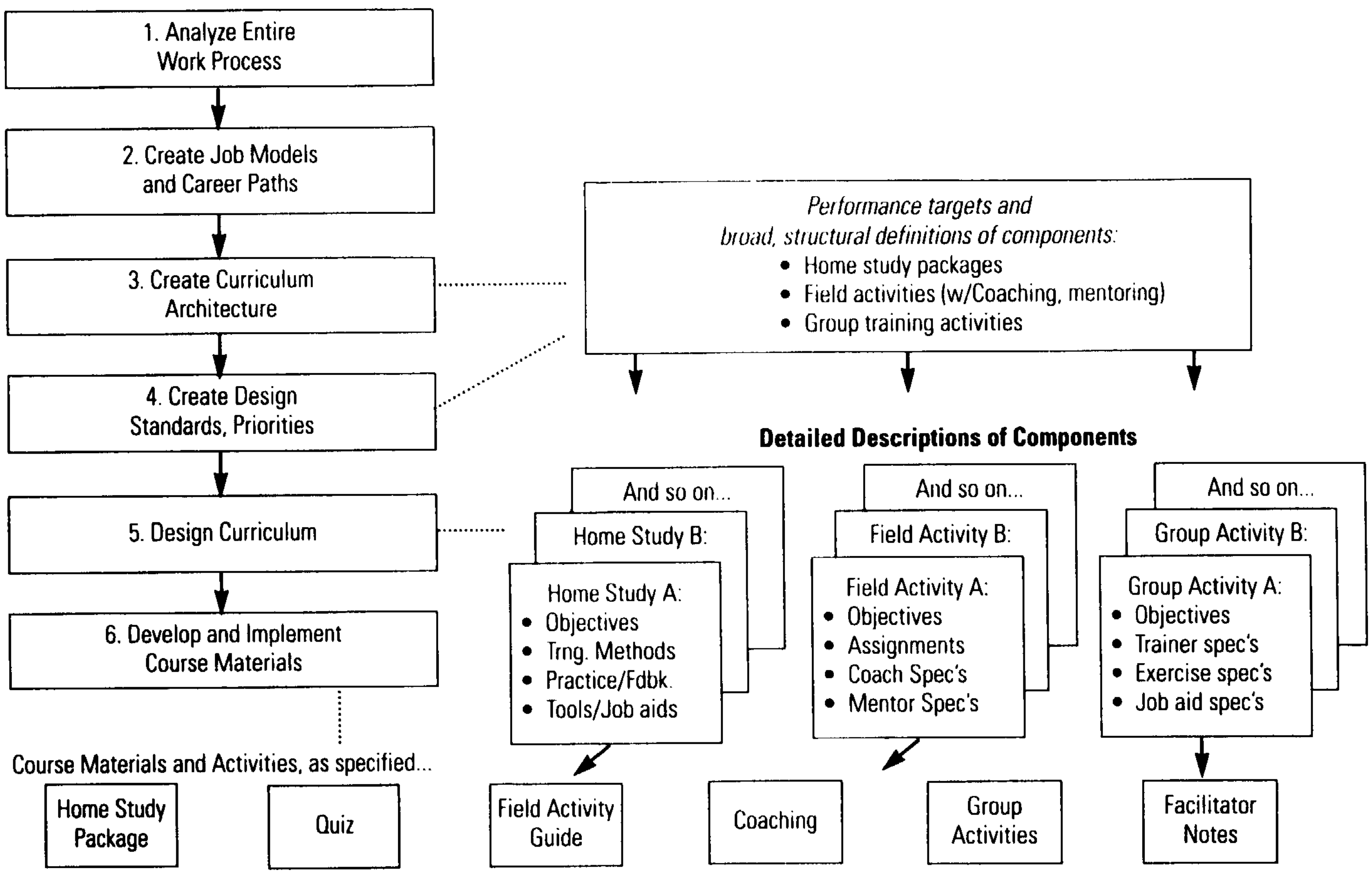
Thus Step 5, design curriculum, is ongoing, as is Step 6, develop and implement course materials. Both steps must be repeated continually to ensure that learning-support materials accurately reflect changes in RESPIRONICS products and programs. Because the job model, career paths, and curriculum architecture have been designed to be generic and relatively "changeproof," however, there is less need for developers to wrestle with fundamental structure every time new products or procedures are introduced. Stated another way, there is less opportunity for developers to rethink the fundamentals and idiosyncratically stray from the underlying values that the entire organization articulated and agreed upon. Developers may simply "plug in" the new content details to the existing learning-support structure. This ability not only serves to reduce developers' workload but can also facilitate just-in-time delivery of training by reducing development time required.

Because our focus in this report has been to highlight the unique approach that RESPIRONICS's T/ME used to create learning-support mechanisms for the learning organization, we will not spend time discussing the details of step 5, design curriculum, and step 6, develop and implement course materials. As Figure 2 illustrated, these steps are present in both the typical development approach and in the RESPIRONICS approach. We assume that the reader is familiar with the processes required.

Results

Embarking on the transformation of the entire sales organization of RESPIRONICS, Inc., into a learning organization was the result of more than a year and a half of effort. In this report we have provided a

Figure 3. Curriculum architecture, detailed curriculum design, and course development.



detailed description of some of the steps and substeps that were completed to start this transformation. Yet, although the discussion of these steps tells the story about how the work was accomplished, there is another story to be told about the evolution of consciousness.

Having lived through the first four steps, we can see that four "awakenings" emerged as critical events in the evolution of the sales organization's consciousness of itself as a learning organization.

- During Step 1, analyze entire work process, all members of the sales organization awakened to the possibility that they could define for themselves their own essential job skills and specify their own training and support needs.
- During Step 2, create job models and career paths, field managers and home-office managers awakened to the reality that, given the number and complexity of skills required of the RESPIRONICS salesperson, a formal, centralized training program could not by itself ensure that new hires acquire the needed skill levels. In short, they began to see that T/ME would not be able to do the job alone.
- During Step 3, create curriculum architecture, field and home-office managers awakened to a new vision of a learning organization in which field managers would work hand-in-hand with sales mentors and T/ME performance coaches to provide training to meet the individual development requirements of their salespeople.
- During Step 4, create design standards and priorities, T/ME awakened to its new role as protector and implementer of the shared vision of the learning organization.

Through these awakenings the members of the RESPIRONICS sales organization experienced a fundamental paradigm shift away from seeing themselves as recipients of training and toward seeing themselves as partners in creating a learning organization. This paradigm shift has begun to animate both the work and the relationships of all members of the sales and marketing team as they go about reinventing their organization and creating essential learning-support mechanisms.

Conclusions and Recommendations

As stated earlier, this intervention represented a voyage into unknown territory for RESPIRONICS, Inc. We made some mistakes, and we learned some important lessons. Below are some recommendations, based on these lessons, for those who would undertake similar efforts:

- In Step 1, analyze the entire work process, make certain that enough time is allotted to allow follow-up (repeat interviews) of some interviewees. For example, halfway through the interview process we found subjects identifying critical issues unanticipated by our questionnaire. We noted these, then made the time to return to earlier interviewees with whom we had not discussed these issues. This allowed us to confirm these new findings and explore avenues we had not expected to explore.

- Avoid the temptation to keep things moving without adequate participation by top managers. In the important early stages of our project, our sponsors were literally flying all over the world, often gone for weeks. Despite our inclination to move on without them (and their natural willingness to delegate the project details), we delayed our work until they were available to participate fully in early reviews and definitional meetings. Although this delayed our schedule somewhat, it resulted in three important benefits: First, these managers identified many important issues in our analysis that we would not have otherwise explored. Second, as we designed our job models, career paths, and other fundamental structures, these managers truly wanted to be active partners because they knew. at a detailed level, that these structures were solidly grounded in interviewee response to issues that the management team had themselves raised. Third, when it came time to introduce our innovations to the sales force, these managers actively led the way, knowing deep in their bones why the innovations were important.
- It's important to continually remind line managers how the job model, the associated career path, and the tools can be used to answer their questions related to performance appraisal, hiring, coaching, and similar matters. Indeed, we had to be relatively explicit in our suggestions regarding how to implement the system and repeatedly demonstrate how it could be used to guide them in their decision making. After all, change takes time!
- One trap to avoid is the tendency some people have to return to business as usual (to ignore the learning-support structures because they are unfamiliar with exactly how to apply them. As the developer of the intervention, you will need to lead the way by demonstrating to field people specifically how the system should be implemented. For example, let people know how the job model influenced the training you are about to present. Then be explicit about how their related field coaching activities are based on specific skills in the job model and career path. In this way you will demonstrate that the documents are living references that will help them all bring the learning organization to life.

Questions for Discussion

1. Figure 1 illustrates how the responsibility for defining and maintaining the various learning-support mechanisms was apportioned. What is the significance of this? How does this support the development of the learning organization?
2. Figure 2 compares the authors' recommended development model with those of a typical training development approach. Why would the authors recommend a model that has more steps? What benefits does this model achieve that a more typical approach does not achieve?
3. Review the summary tables of substeps 1, 2, and 3. Note that the authors recommend many reviews, confirmations, and approval points for their outputs. What are the benefits of these reviews? Could some be eliminated? If so, explain how and why.
4. In Step 4 the authors recommend creation of a custom-made set of training design standards. Why not simply implement standards developed in other companies or purchase a set of "off-the-shelf" design guidelines? (That is, why go to the trouble of creating unique guidelines?)
5. Each of the summary tables contains a column marked "challenges." Review these and name the five most significant challenges the authors faced. Would you face similar challenges in your environment? How would you overcome them?

The Authors

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Eighteen Case Studies from the Real World of Training

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